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SEQUENCE LISTING

<110> The Brigham and Women's Hospital, Inc.
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 Tamura, Koichi
 Horiuchi, Masatsugu
 Dzau, Victor J.

<120> CNRE Binding Factors and Uses Thereof

<130> B0801/7101WO/ERG/KA

<150> US 60/082,997

<151> 1998-04-24

<160> 23

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<211> 1706

<212> DNA

<213> Mus musculus

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cct gat gtt tct cct gat tct gca acg gag ttg tgg aag aca gaa cct	159
Pro Asp Val Ser Pro Asp Ser Ala Thr Glu Leu Trp Lys Thr Glu Pro	
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caa gat gca gga gac cag gga ggc aac act tgc atc ctc agg gag gaa	207
Gln Asp Ala Gly Asp Gln Gly Gly Asn Thr Cys Ile Leu Arg Glu Glu	
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gcc agg atg ccc cag tca act ggg gtt gct tta ggg ata ggg ttg gag	255
Ala Arg Met Pro Gln Ser Thr Gly Val Ala Leu Gly Ile Gly Leu Glu	
45 50 55	
tca gca gag cct aca gcc ctg ctc ccc agg gca gag acc ctc cca gag	303
Ser Ala Glu Pro Thr Ala Leu Leu Pro Arg Ala Glu Thr Leu Pro Glu	
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ccg aca gag ctt cgt cca caa aag cgg aaa aag ggc cca gcc ccc aaa	351
Pro Thr Glu Leu Arg Pro Gln Lys Arg Lys Lys Gly Pro Ala Pro Lys	
75 80 85	
atg ctg ggg aac gag ctg tgc agt gtc tgt ggg gac aaa gcc tct ggc	399
Met Leu Gly Asn Glu Leu Cys Ser Val Cys Gly Asp Lys Ala Ser Gly	

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ttc cat tac aac gtg ctg agc tgc gag ggc tgc aag gga ttc ttc cgc				447
Phe His Tyr Asn Val Leu Ser Cys Glu Gly Cys Lys Gly Phe Phe Arg				
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cgc agt gtc atc aag gga gca cgc tat gtc tgc cac agc ggt ggc cac				495
Arg Ser Val Ile Lys Gly Ala Arg Tyr Val Cys His Ser Gly Gly His				
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tgc ccc atg gac acc tac atg cgg cgg aaa tgc cag gag tgt cga ctt				543
Cys Pro Met Asp Thr Tyr Met Arg Arg Lys Cys Gln Glu Cys Arg Leu				
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cgc aaa tgc cgc cag gca ggc atg agg gag gag tgt gtg ctg tca gaa				591
Arg Lys Cys Arg Gln Ala Gly Met Arg Glu Glu Cys Val Leu Ser Glu				
155		160	165	
gaa cag atc cgc ttg aag aaa ctg aag cgg caa gaa gag gaa cag gct				639
Glu Gln Ile Arg Leu Lys Lys Leu Lys Arg Gln Glu Glu Glu Gln Ala				
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caa gcc act tcg gtg tcc cca agg gtg tcc tca cct cct caa gtc ctg				687
Gln Ala Thr Ser Val Ser Pro Arg Val Ser Ser Pro Pro Gln Val Leu				
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cca cag ctc agc cca gag cag ctg ggc atg atc gag aag ctg gtg gct				735
Pro Gln Leu Ser Pro Glu Gln Leu Gly Met Ile Glu Lys Leu Val Ala				
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gcc cag caa cag tgt aac agg cgc tcc ttt tca gac cgc ctg cgc gtc				783
Ala Gln Gln Gln Cys Asn Arg Arg Ser Phe Ser Asp Arg Leu Arg Val				
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acg cct tgg ccc att gca ccc gac cct cag agc cgg gaa gcc cga caa				831
Thr Pro Trp Pro Ile Ala Pro Asp Pro Gln Ser Arg Glu Ala Arg Gln				
235		240	245	
cag cgc ttt gcc cac ttt act gag ctg gcc atc gtg tcc gtg cag gag				879
Gln Arg Phe Ala His Phe Thr Glu Leu Ala Ile Val Ser Val Gln Glu				
250		255	260	265
att gtt gac ttt gcc aaa cag ctc cct ggc ttc cta cag ctc agc agg				927
Ile Val Asp Phe Ala Lys Gln Leu Pro Gly Phe Leu Gln Leu Ser Arg				
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gag gac cag atc gcc ttg ctg aag acc tct gca att gag gtc atg ctt				975
Glu Asp Gln Ile Ala Leu Leu Lys Thr Ser Ala Ile Glu Val Met Leu				
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ctg gag acg tca cgg agg tac aac ccc ggc agt gag agc atc acc ttc				1023
Leu Glu Thr Ser Arg Arg Tyr Asn Pro Gly Ser Glu Ser Ile Thr Phe				
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ctc aag gac ttc agt tac aac cgg gaa gac ttt gcc aaa gca ggg ctg				1071
Leu Lys Asp Phe Ser Tyr Asn Arg Glu Asp Phe Ala Lys Ala Gly Leu				
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 350 355 360

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 Ile Phe Ser Ala Asp Arg Pro Asn Val Gln Asp Gln Leu Gln Val Glu
 365 370 375

agg ctg caa cac aca tat gtg gag gcc ctg cac gcc tac gtc tcc atc 1263
 Arg Leu Gln His Thr Tyr Val Glu Ala Leu His Ala Tyr Val Ser Ile
 380 385 390

aac cac ccc cac gac cca ctg atg ttc cca cgg atg cta atg aag ctg 1311
 Asn His Pro His Asp Pro Leu Met Phe Pro Arg Met Leu Met Lys Leu
 395 400 405

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 410 415 420 425

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 Leu Arg Leu Gln Asp Lys Lys Leu Pro Pro Leu Leu Ser Glu Ile Trp
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 Asp Val His Glu
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 Leu Pro Arg Ala Glu Thr Leu Pro Glu Pro Thr Glu Leu Arg Pro Gln
 65 70 75 80
 Lys Arg Lys Lys Gly Pro Ala Pro Lys Met Leu Gly Asn Glu Leu Cys
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Ser Val Cys Gly Asp Lys Ala Ser Gly Phe His Tyr Asn Val Leu Ser
 100 105 110
 Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Val Ile Lys Gly Ala
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 Arg Tyr Val Cys His Ser Gly Gly His Cys Pro Met Asp Thr Tyr Met
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 Arg Arg Lys Cys Gln Glu Cys Arg Leu Arg Lys Cys Arg Gln Ala Gly
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 Met Arg Glu Glu Cys Val Leu Ser Glu Glu Gln Ile Arg Leu Lys Lys
 165 170 175
 Leu Lys Arg Gln Glu Glu Glu Gln Ala Gln Ala Thr Ser Val Ser Pro
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 Arg Val Ser Ser Pro Pro Gln Val Leu Pro Gln Leu Ser Pro Glu Gln
 195 200 205
 Leu Gly Met Ile Glu Lys Leu Val Ala Ala Gln Gln Gln Cys Asn Arg
 210 215 220
 Arg Ser Phe Ser Asp Arg Leu Arg Val Thr Pro Trp Pro Ile Ala Pro
 225 230 235 240
 Asp Pro Gln Ser Arg Glu Ala Arg Gln Arg Phe Ala His Phe Thr
 245 250 255
 Glu Leu Ala Ile Val Ser Val Gln Glu Ile Val Asp Phe Ala Lys Gln
 260 265 270
 Leu Pro Gly Phe Leu Gln Leu Ser Arg Glu Asp Gln Ile Ala Leu Leu
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 Lys Thr Ser Ala Ile Glu Val Met Leu Leu Glu Thr Ser Arg Arg Tyr
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 Asn Pro Gly Ser Glu Ser Ile Thr Phe Leu Lys Asp Phe Ser Tyr Asn
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 Glu Phe Ala Leu Leu Ile Ala Ile Ser Ile Phe Ser Ala Asp Arg Pro
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 Asn Val Gln Asp Gln Leu Gln Val Glu Arg Leu Gln His Thr Tyr Val
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 Glu Ala Leu His Ala Tyr Val Ser Ile Asn His Pro His Asp Pro Leu
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 Met Phe Pro Arg Met Leu Met Lys Leu Val Ser Leu Arg Thr Leu Ser
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- 6 -

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<212> DNA

<213> Homo sapiens

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<213> Mus musculus

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<210> 8
<211> 763
<212> PRT
<213> Mus musculus

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Val Met Leu Arg Leu Arg Ser Gly Cys Thr Ala His Glu Leu Arg Ile
35      40      45
Pro Cys Cys Ser Ala Val Ala Glu Ala Glu Ala Gly Thr Glu Val Pro
50      55      60
Ala Gly Leu Arg Arg Gly Val Gly Gly Ser Met Asn Gly Ser Gly Gly
65      70      75      80
Gly Gly Gly Ser Asp Leu Ser Trp Ile Pro Gly Pro Gly Gln Gly Leu
85      90      95
Pro Arg Ala Arg Thr Val Tyr Gly Gly Gly Ser Trp Ile Leu Arg Ala
100     105     110
Arg Thr Asp Gly Arg Ala Glu Leu Gly Gly Ala Gly Pro Gly Gly Leu
115     120     125
Gly Pro Glu Ala Arg Arg Ala Gly Ala Gly His Asp Ala Pro Lys Glu
130     135     140
Ala Lys Pro Ser Thr Ala Arg Glu Met Arg Gly Gly Gln Arg Ser Gly
145     150     155     160
Val Arg Gly Leu Glu Pro Gly Gly Thr Gly Val Gly Ser Val Glu Trp
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Ala Gln Val Arg Val Glu Gly Asp Ser Ser Gly Leu Gly Ala Asp Asp
180     185     190
Leu Gly Ser Ser Leu Leu Thr Arg Val Leu Lys Glu Pro Glu Gly His
195     200     205
Arg Val Arg Glu Val Gln Phe Thr Thr Ala Gly Ser Leu Val Arg Ile
210     215     220
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225     230     235     240
Val Asp Thr Glu Asp Ser Phe Asp Glu Gly Pro Gly Ala Leu Val Leu
245     250     255
Glu Ser Asp Leu Leu Leu Gly Gln Asp Leu Glu Phe Glu Glu Glu Glu
260     265     270
Glu Glu Asp Glu Gly Asp Gly His Asn Asp Gln Leu Met Gly Phe Glu
275     280     285
Arg Asp Ser Glu Gly Asp Ser Gln Gly Ala Arg Pro Gly Leu Pro Tyr
290     295     300
Gly Leu Ser Asp Asp Glu Ser Gly Gly Gly Arg Ala Leu Ser Ala Glu
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Ser Glu Val Glu Glu Pro Ala Arg Gly Pro Gly Glu Ala Arg Gly Glu
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Arg Pro Gly Pro Ala Cys Gln Leu Cys Gly Gly Pro Thr Gly Glu Gly
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Gly Thr Met Pro Arg Arg Ser Glu Asn Ala Leu Ile Leu Pro Asp Leu		480
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Cys Met Arg Gly Glu Ala Gly Gly Val Ala Thr Gly Gly Pro Gln Gly		560
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Tyr Pro Asn His Leu Ala Arg His Met Lys Thr His Ser Gly Glu Lys		590
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Tyr Ser Cys Asn Gln Ser Met Asn Leu Lys Arg His Met Leu Arg His		670
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Thr Gly Glu Lys Pro Phe Arg Cys Ala Thr Cys Ala Tyr Thr Thr Gly		685
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His Trp Asp Asn Tyr Lys Arg His Gln Lys Val His Gly His Gly Gly		700
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Ala Gly Gly Pro Gly Leu Ser Ala Pro Glu Gly Trp Ala Pro Pro His		720
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<211> 2289

<212> DNA

<213> Mus musculus

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<211> 509

<212> DNA

<213> Mus musculus

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<210> 11

<211> 500

- 11 -

<212> DNA

<213> Mus musculus

<400> 11

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<211> 487

<212> DNA

<213> Mus musculus

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<210> 13

<211> 446

<212> DNA

<213> Mus musculus

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<211> 441

<212> DNA

<213> Mus musculus

<400> 14

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<212> DNA
<213> Mus musculus

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<211> 586
<212> DNA
<213> Mus musculus

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<211> 2336
<212> DNA
<213> Mus musculus

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- 13 -

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<210> 18

<211> 434

<212> PRT

<213> Mus musculus

<400> 18

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              20              25              30
Glu Ser Asp Leu Leu Leu Gly Gln Asp Leu Glu Phe Glu Glu Glu Glu
              35              40              45
Glu Glu Asp Glu Gly Asp Gly His Asn Asp Gln Leu Met Gly Phe Glu
              50              55              60
Arg Asp Ser Glu Gly Asp Ser Gln Gly Ala Arg Pro Gly Leu Pro Tyr
65              70              75              80
Gly Leu Ser Asp Asp Glu Ser Gly Gly Gly Arg Ala Leu Ser Ala Glu
              85              90              95
Ser Glu Val Glu Glu Pro Ala Arg Gly Pro Gly Glu Ala Arg Gly Glu
              100             105             110
Arg Pro Gly Pro Ala Cys Gln Leu Cys Gly Gly Pro Thr Gly Glu Gly
              115             120             125
Pro Cys Cys Gly Ala Gly Gly Arg Gly Gly Gly Pro Pro Leu Pro Pro
              130             135             140
Arg Leu Leu Tyr Ser Cys Arg Leu Cys Ala Phe Val Ser His Tyr Ser
145             150             155             160
Ser His Leu Lys Arg His Met Gln Thr His Ser Gly Glu Lys Pro Phe
              165             170             175
Arg Cys Gly Arg Cys Pro Tyr Ala Ser Ala Gln Leu Val Asn Leu Thr
              180             185             190
Arg His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Pro His

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<210> 19
<211> 2651
<212> DNA
<213> Mus musculus
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<400> 19						
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caccgtgtat	gggggcggtt	cgtggatcct	aagagcaagg	accgacggca	gggccgaact	360
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cttggttcgg	attatgggta	ctgcttggga	gggagattcc	acaagcacc	tccccctctt	720
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gagtgaagtt	gaggaaaccag	ccagggggtcc	aggggaggcc	aggggtgaga	ggccaggccc	1020
agcctgtcag	ctgtgtgggg	ggccgacagg	taggggggcc	tgttgtgggg	caggagggcg	1080
gggtgggggg	cccccgctgc	ccccacggtt	actgtactca	tgccggtctt	qcqctttcgt	1140

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gtcccactac tcgagccacc tgaagcggca catgcagaca cacagcgggg agaagccgtt 1200
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aaaaaaaaa a 2651

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<210> 20
 <211> 539
 <212> PRT
 <213> Mus musculus

<400> 20
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 Val Asp Thr Glu Asp Ser Phe Asp Glu Gly Pro Gly Ala Leu Val Leu
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 Glu Ser Asp Leu Leu Leu Gly Gln Asp Leu Glu Phe Glu Glu Glu Glu
 35 40 45
 Glu Glu Asp Glu Gly Asp Gly His Asn Asp Gln Leu Met Gly Phe Glu
 50 55 60
 Arg Asp Ser Glu Gly Asp Ser Gln Gly Ala Arg Pro Gly Leu Pro Tyr
 65 70 75 80
 Gly Leu Ser Asp Asp Glu Ser Gly Gly Gly Arg Ala Leu Ser Ala Glu
 85 90 95
 Ser Glu Val Glu Glu Pro Ala Arg Gly Pro Gly Glu Ala Arg Gly Glu
 100 105 110
 Arg Pro Gly Pro Ala Cys Gln Leu Cys Gly Gly Pro Thr Gly Glu Gly
 115 120 125
 Pro Cys Cys Gly Ala Gly Gly Arg Gly Gly Gly Pro Pro Leu Pro Pro
 130 135 140
 Arg Leu Leu Tyr Ser Cys Arg Leu Cys Ala Phe Val Ser His Tyr Ser
 145 150 155 160
 Ser His Leu Lys Arg His Met Gln Thr His Ser Gly Glu Lys Pro Phe
 165 170 175
 Arg Cys Gly Arg Cys Pro Tyr Ala Ser Ala Gln Leu Val Asn Leu Thr
 180 185 190

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Arg	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Arg	Cys	Pro	His
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Cys	Pro	Phe	Ala	Cys	Ser	Ser	Leu	Gly	Asn	Leu	Arg	Arg	His	Gln	Arg
	210					215					220				
Thr	His	Thr	Gly	Pro	Pro	Thr	Pro	Pro	Cys	Pro	Thr	Cys	Gly	Phe	Arg
225					230					235					240
Cys	Cys	Ala	Pro	Arg	Pro	Thr	Arg	Pro	Pro	Ser	Pro	Thr	Glu	Gln	Glu
			245						250					255	
Gly	Thr	Met	Pro	Arg	Arg	Ser	Glu	Asp	Ala	Leu	Ile	Leu	Pro	Asp	Leu
			260					265					270		
Ser	Leu	His	Val	Pro	Pro	Gly	Gly	Ala	Ser	Phe	Leu	Pro	Asp	Cys	Gly
		275					280					285			
Gln	Leu	Arg	Gly	Glu	Gly	Glu	Ser	Leu	Cys	Gly	Thr	Gly	Ser	Glu	Pro
	290				295						300				
Leu	Pro	Glu	Leu	Leu	Phe	Pro	Trp	Thr	Cys	Arg	Gly	Cys	Gly	Gln	Glu
305					310					315					320
Leu	Glu	Glu	Gly	Glu	Gly	Ser	Arg	Leu	Gly	Ala	Ala	Met	Cys	Gly	Arg
			325						330					335	
Cys	Met	Arg	Gly	Glu	Ala	Gly	Gly	Val	Ala	Thr	Gly	Gly	Pro	Gln	Gly
			340					345					350		
Pro	Gly	Asp	Lys	Gly	Phe	Ala	Cys	Ser	Leu	Cys	Pro	Phe	Ala	Thr	His
		355					360					365			
Tyr	Pro	Asn	His	Leu	Ala	Arg	His	Met	Lys	Thr	His	Ser	Gly	Glu	Lys
	370					375					380				
Pro	Phe	Arg	Cys	Ala	Arg	Cys	Pro	Tyr	Ala	Ser	Ala	His	Leu	Asp	Asn
385					390					395					400
Leu	Lys	Arg	His	Gln	Arg	Val	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys
			405						410					415	
Pro	Leu	Cys	Pro	Tyr	Ala	Cys	Gly	Asn	Leu	Ala	Asn	Leu	Lys	Arg	His
			420					425					430		
Gly	Arg	Ile	His	Ser	Gly	Asp	Lys	Pro	Phe	Arg	Cys	Ser	Leu	Cys	Asn
	435					440					445				
Tyr	Ser	Cys	Asn	Gln	Ser	Met	Asn	Leu	Lys	Arg	His	Met	Leu	Arg	His
	450					455					460				
Thr	Gly	Glu	Lys	Pro	Phe	Arg	Cys	Ala	Thr	Cys	Ala	Tyr	Thr	Thr	Gly
465					470					475					480
His	Trp	Asp	Asn	Tyr	Lys	Arg	His	Gln	Lys	Val	His	Gly	His	Gly	Gly
			485						490					495	
Ala	Gly	Gly	Pro	Gly	Leu	Ser	Ala	Pro	Glu	Gly	Trp	Ala	Pro	Pro	His
			500					505					510		
Ser	Pro	Pro	Ser	Val	Leu	Ser	Thr	Arg	Gly	Pro	Ala	Ala	Leu	Gly	Ala
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	530					535									

<210> 21

<211> 30

<212> DNA

<213> Mus musculus

<400> 21

acctaacttg gtctcacagg ctagaattta

30

<210> 22

<211> 30

<212> DNA

<213> Rattus norvegicus

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<400> 22
acctagcttg gcctcacggg ctaggattta 30

<210> 23
<211> 28
<212> DNA
<213> Homo sapiens

<400> 23
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